



## July 2008

### Overview

On February 26, 2004, the California Air Resources Board (ARB or Board) adopted the **Transport Refrigeration Unit (TRU) Airborne Toxic Control Measure (ATCM)**. The rulemaking became effective December 10, 2004, and was codified under title 13 California Code of Regulations (CCR), section 2477. The TRU ATCM requires all TRUs and TRU generator sets that operate in California, regardless of where they are based (including out-of-state and out-of-country), to meet in-use performance standards that are phased in beginning December 31, 2008, for model year 2001 and older units. Then, 2002 and subsequent model year units must comply by the end of the seventh year after the model year. All TRUs and TRU gensets must eventually meet the most stringent in-use standard – one that requires a diesel particulate filter that reduces diesel particulate matter exhaust emissions by at least 85 percent. Also, owners of California-based TRUs and TRU gensets must apply for ARB identification numbers (IDN) by January 31, 2009. And, operators of California-based TRUs must submit Operator Reports by January 31, 2009. Hardcopy forms will be available in November 2008 for mail-in submittals. Electronic forms will also be available through the TRU website or the Air Resources Board Equipment Registration (ARB-ER) portal (under construction) for online submittals by December 1, 2008. Please see the ARB's TRU website for more details at <http://www.arb.ca.gov/diesel/tru.htm>.

### U.S. EPA Waiver

On March 28, 2005, ARB requested the U.S. Environmental Protection Agency (U.S. EPA) to grant a waiver of preemption under the federal Clean Air Act. The waiver is required before ARB can enforce the in-use performance standards, but is not required for the other provisions of the TRU ATCM, such as the facility reports, ARB IDN, and Operator Reports. As of the middle of July 2008, U.S. EPA has not acted on the waiver. ARB anticipates that U.S. EPA will approve the TRU ATCM waiver application; however, the timing of the approval is uncertain.

### ARB Enforcement Policy, Pending Waiver Approval

Compliance with the first phase of in-use performance standards is required by December 31, 2008. ARB recommends that fleets make plans to comply by December 31, 2008, if required for the affected TRU model years because we believe that U.S. EPA will approve the waiver. If U.S. EPA doesn't approve the TRU ATCM waiver by December 31, 2008, ARB will not enforce the in-use performance standards. Furthermore, if U.S. EPA approves the waiver after December 31, 2008, then enforcement will not begin until at least 30 days after approval.

ARB, as part of any enforcement action, will take into consideration good-faith efforts made by the TRU owner to meet the compliance deadline. The lead times for replacement engines and verified diesel emission control strategies (VDECS) are currently three to four months, but this could become longer as fleets place orders. Lead time for installation of replacement engines and VDECS may add another one to two months or more. Therefore, purchase orders need to be placed 4 to 6 months in advance of the compliance dates to show good-faith attempts to comply on time. TRU owners should contact VDECS manufacturers and place orders between July and early September 2008.

The TRU ATCM is an important part of California's Diesel Risk Reduction Plan. Since the TRU ATCM was adopted, ARB believes that the emissions data collected and the scientific studies completed all show that the health risk due to diesel PM near facilities (and regionally) is much greater than thought when the regulation was adopted. The TRU website has links to an ARB press release and Sacramento Bee news story showing 70 percent greater risk

(<http://www.arb.ca.gov/diesel/tru.htm>, see "More premature deaths than previously thought from particles in vehicle exhaust"). The Health Effects Institute also published a report titled *Health Effects of Diesel Exhaust: An HEI Perspective*, which is posted on the Internet at <http://www.osti.gov/bridge/servlets/purl/827834-1d75mX/native/827834.pdf>. This Harvard study links diesel exhaust to truckers' deaths (see January 30, 2008, Sacramento Bee article at <http://www.sacbee.com/101/story/672742.html>). Similar articles were recently published in Land Line Magazine, The Truckers Report, and other on-line trucker web sites. A strong link has been established between diesel PM and asthma, respiratory ailments and diseases, heart attacks and heart diseases, hospital admission rates, and death rates.

ARB is committed to protecting the public health and plans to aggressively enforce the in-use performance standards once U.S. EPA has approved the waiver. Penalties up to \$10,000 per day per unit per violation may be assessed if it is apparent that due diligence was lacking. Pending U.S. EPA's decision on the in-use performance standards, ARB will enforce all other requirements of the regulation that do not require U.S. EPA waiver approval (e.g. Facility Report, ARB IDN, and Operator Report).

### VDECS Verifications

Staff has processed diesel emissions control strategies for TRUs through the Verification Procedure, Warranty, and In-Use Compliance Requirements for In-Use Strategies to Control Emissions from Diesel Engines (title 13, CCR, sections 2700

through 2710). News about VDECS that can be used to retrofit TRUs is posted on ARB's TRU website at: <http://www.arb.ca.gov/diesel/tru.htm>.

The latest VDECS to be verified is the Proventia FTF™, a Level 2 flow-through filter (meets the Low-Emission TRU In-Use Performance Standard (LETRU)). Rypos, Inc. is the exclusive U.S. distributor for the Proventia FTF. Huss, LLC also has a verified Level 3 diesel particulate filter (meets LETRU and the more stringent Ultra-Low-Emission TRU In-Use Performance Standard (ULETRU)). For details, please see the Executive Orders on ARB's Verification website at: <http://www.arb.ca.gov/diesel/verdev/level2/level2.htm> for Level 2 and <http://www.arb.ca.gov/diesel/verdev/level3/level3.htm> for Level 3. Applications for two additional Level 2 and three Level 3 VDECS have been submitted and are in process. One additional Level 3 application is expected.

### **Alternative Technologies**

Electric Standby retrofits for truck TRUs are feasible, available now, and do not require verification.

The multi-media assessment for biodiesel should be completed by the end of 2008 and several biodiesel producers have indicated an interest in submitting an application for verification as a VDECS. Because verification will not be completed by December 31, 2008, B100 is not a compliance option for the first compliance phase, but may be for subsequent phases.

Pure cryogenic systems can be used and they are exempt from the TRU ATCM (if there is no diesel engine used) and therefore do not require verification. If a hybrid cryogenic system is used (including both TRU with diesel engine and cryogenic system), then diesel engine use must be eliminated at facilities to qualify as a compliance option.

### **Engine Replacements**

Replacing noncompliant TRU engines with a new or newer engine does not meet LETRU, but the compliance date for the model year of the new engine would be December 31<sup>st</sup> of the seventh year after the replacement engine model year. Replacing a noncompliant engine with a rebuilt or remanufactured engine of a newer certified configuration is another compliance option, but again, this just resets the compliance deadline for meeting the TRU ATCM's in-use performance standards. [TRU Advisory #08-05](#) explains the conditions that must be met when using rebuilt engines and the effective model year of the rebuilt engine for determining the new compliance date.

### **Availability**

Staff believes there will be adequate compliance options available in time for compliance with this regulation and recommends owners take early, proactive steps to comply.

### **Cost Effectiveness**

Cost of compliance, using the compliance options listed above, ranges from \$4,000 to \$15,000, with VDECS retrofit being the lowest cost and engine replacement being the highest cost. Although the cost of compliance is greater than anticipated during rule development, the TRU ATCM's cost-effectiveness, expressed as dollars per pound of pollutant reduced, is still within the range of other diesel control measures' cost-effectiveness that have been adopted by the Board. These costs obviously affect a business' profitability and TRU fleets are encouraged to revise their business plans accordingly.

### **Operator Requirements**

The LETRU and ULETRU In-use Performance Standards apply to all TRUs that operate in California on a phased compliance schedule, beginning December 31, 2008. Staff believes there will be sufficient compliance options available in time for compliance. Compliance deadline extensions are not included in the TRU ATCM. Operator reports and ARB Identification Number applications are due to ARB by January 31, 2009.

### **Compliance Assistance Documents**

Compliance assistance materials and TRU Advisories are available at the ARB's TRU website at: <http://www.arb.ca.gov/diesel/tru.htm>. "TRU Brochure #2" and "TRU ATCM Tutorial" are available in English and Spanish. Other compliance assistance documents include "How do I Comply with the TRU ATCM?" and "Frequently Asked Questions and Guidelines for the TRU ATCM".

### **For More Information**

Past TRU ATCM Status Updates are available through the archive link of the TRU website. If you have questions, please call ARB's toll-free TRU Help Line at 1-888-878-2826 (1-888-TRU-ATCM). Visit ARB's TRU web site at <http://www.arb.ca.gov/diesel/tru.htm>. You may also send emails to the TRU email address: [tru@arb.ca.gov](mailto:tru@arb.ca.gov). Regulatory documents may be viewed and downloaded from <http://www.arb.ca.gov/regact/trude03/trude03.htm>.

If you are handicapped, you may obtain this document in an alternative format. Contact ARB's ADA Coordinator at (916) 322-4505 (voice); (916) 324-9531 (TDD, Sacramento area only); or (800) 700-8326 (TDD, outside Sacramento).